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# IXODES CORDIFER NEUMANN 1908 (IXODIDES : ACARINA)

## A DESCRIPTION OF THE FEMALE AND A REDESCRIPTION OF THE MALE.

(With two Text-figures.)

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Several ticks sent from Papua to Mr. P. J. O'Sullivan, Parasitologist, Animal Health Station, Yeerongpilly, for identification have proved to be *Ixodes cordifer* Neumann. Neumann's description of this species was based on a single male taken from an unknown host at Sekroe, Dutch New Guinea. The species is included by Nuttall *et al.* (1911) in their revision of the genus *Ixodes*, by Krijgsman and Ponto (1932) in their paper on ticks occurring in the East Indian Archipelago, and by Fielding (1926) and Taylor (1946) in their respective papers on Australasian ticks. None of these workers examined specimens, and their descriptions were based on Neumann's original work.

The material now available consists of three males and eleven females, and as it would seem that the species has not been collected since Neumann described the male in 1908, a description of the female and a redescription of the male are provided.

### *Ixodes cordifer* Neumann.

*Ixodes cordifer* Neumann, 1908, p. 73, fig. 1; Nuttall *et al.*, 1911, p. 233, fig. 229; Fielding, 1926, p. 48, fig. 16; Krijgsman and Ponto, 1932, p. 28, fig. 45; Taylor, p. 47, fig. 49.

MALE, Figure 1, a-d.

DIAGNOSIS. Oval, of medium size, with distinct marginal fold posteriorly only; scutum with fine, mainly marginal, punctations and with linear and inconspicuous lateral carinae; palps short and broad, hypostome dentition 2/2; venter with median plate broadest posteriorly, the anal plate cordate and pointed behind; coxae I-III each with two spurs, the internal spur not conspicuous; coxa IV with a single, pointed spur; trochanters each with a single spur, best developed on trochanter IV.

DESCRIPTION. Body 2.6-2.8 mm. by 1.9-2.0 mm.; yellowish, darker along margins of scutum, oval, widest in region of spiracles and approximately three to four times as wide as the emargination.

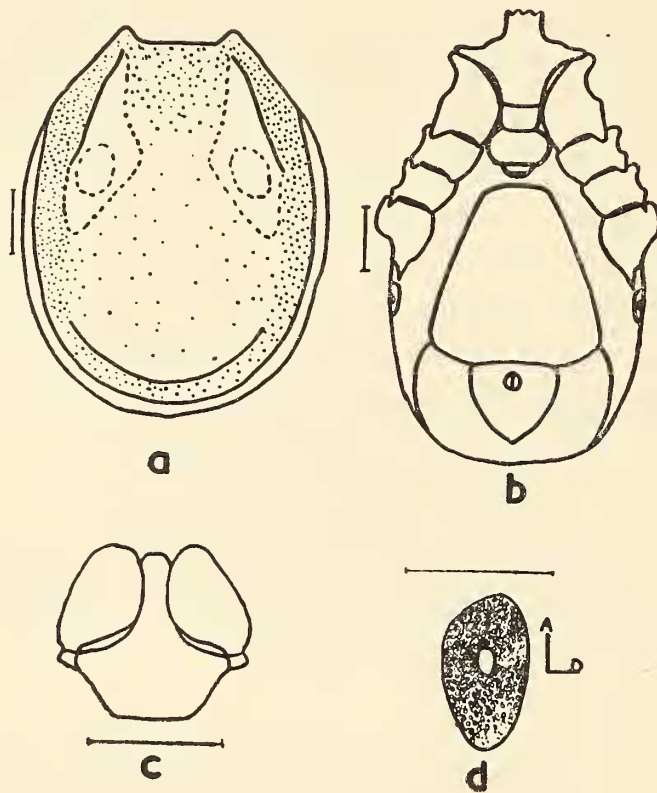
Scutum yellowish and covering almost all dorsum, with scattered, fine, minute hairs; a broad, smooth depression on each side extending for one half to two thirds of the scutal length, limited laterally by the

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lateral carinae which are short, linear and not very distinct; emargination moderate, scapulae bluntly pointed; punctations fine, few medianly, but numerous along margins of scutum, particularly between the lateral carinae and lateral margins; cervical grooves short, convergent, superficial; marginal fold distinct posteriorly only.

Capitulum 0.6-0.64 mm. in length; width at posterior border of basis capituli 0.36-0.43 mm.; basis dorsally finely punctate, pentagonal, the posterior border straight and without cornua; auriculae absent; palpi 0.5 mm. long, article 1 transverse, articles 2 and 3 apparently fused, constricted at base and broad dorsally attaining a width of about half the length; hypostome 0.30 mm. long, dentition 2/2 with four or five rows of broad, rounded teeth, the posterior rows very shallow and ridge-like.



Text fig. 1. *Ixodes cordifer* (male). a, scutum, the dotted lines enclose the depressed areas; b, venter; c, capitulum (dorsal view); d, spiracular plate. The straight lines each represent 0.5 mm.

Venter concave, with scattered, pale, short hairs, most conspicuous near spiracles; genital orifice broad, between coxae II; pregenital plate broader than long; median plate 1.4 mm. long, broadest posteriorly (1.07 mm.) where it is three times the width anteriorly; adanal plates slightly concave anteriorly, curved posteriorly to fuse behind the point of the anal plate, the posterior border wider than the anterior border; anal plate somewhat cordiform, as broad as long (0.53 by 0.53 mm.) and pointed posteriorly, the anterior margin straight or slightly convex.

Spiracular plate oval, longer than broad, 0.5 mm. by 0.22 mm.

Legs yellow and of moderate length; coxae broad, flat and contiguous or almost so with a few long hairs on the posterior borders; coxae I-III with a medium sized spur at the postero-external angle and a shallow inconspicuous spur at the postero-internal angle, both spurs most prominent on coxa I; coxa IV with a single conspicuous, pointed spur; trochanters I-IV each with a single spur, difficult to detect on trochanter I and increasing in size posteriorly; tarsi 0.68-0.72 mm. long, tapering somewhat abruptly; pulvillus not quite as long as claw.

FEMALE, Figure 2, a-d.

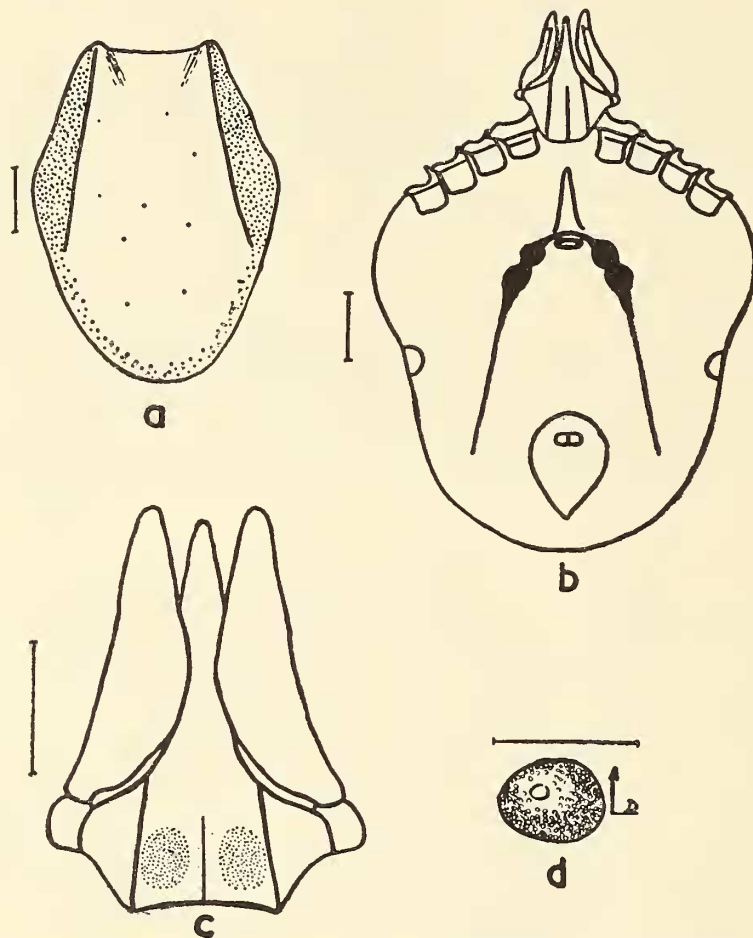
DIAGNOSIS. Of medium size, partially engorged specimens being very broad anteriorly, narrowing suddenly in width in region of spiracles; marginal fold visible only laterally and disappearing on engorgement; scutum longer than broad, with well developed lateral carinae; basis capituli pentagonal with three longitudinal ridges dorsally and ventrally; porose areas oval, inconspicuous; palpi elongate; an elongate, triangular depression anterior to the genital opening; anal grooves broadly pyriform and meeting behind anus; coxae with longitudinal ridges and a single moderate-sized spur at the postero-external angle.

DESCRIPTION. Body of unfed specimens, yellowish, oval, 3.2 mm. by 2.3 mm., widest in region of spiracles; partly engorged specimens greyish, very wide anteriorly and narrowing suddenly immediately anterior to spiracles; engorged specimens reddish, 11.2 mm. by 8.6 mm., elongate, oval, about equally thick at both ends; body hairs sparse, minute and pale; marginal groove deep and conspicuous in unfed specimens, but not attaining the posterior margin of body and disappearing on engorgement; lateral and median grooves well developed in engorged specimens.

Scutum yellow, with darker lateral margins, 2.3-2.5 mm. by 1.8-2.0 mm., longer than broad, broadest at about its middle, flat medianly and convex laterally, antero-lateral margins slightly sinuous, postero-lateral margins slightly convex; scapulae rounded, the emargination shallow; punctations fine, few medianly, distributed mainly around margins, most numerous and slightly coarser external to the lateral carinae; lateral carinae prominent, not quite attaining the postero-lateral margins; cervical grooves, short, convergent and superficial.

Capitulum length 1.1-1.3 mm.; width at posterior border of basis capituli 0.53 mm.; basis capituli pentagonal, posterior border concave, with a prominent lateral ridge dorsally on each side, extending from the postero-lateral angle to base of hypostome and making the postero-lateral angles prominent; a less prominent median ridge extending forward between the porose area for about half the length of the basis capituli; similar ridges ventrally, lateral ridges highly developed posteriorly, median ridge longer than its dorsal counterpart; porose

areas oval, of moderate size, shallow and inconspicuous, the interval slightly less than their width; palpi 0.9-1.1 mm. long, projecting slightly beyond tip of hypostome, article 1 transverse, articles 2 and 3 apparently fused, elongate, widest medianly; hypostome somewhat lanceolate, dentition 3/3 and 2/2, the inner file of 16 to 18 minute teeth disappearing posteriorly; middle and outer files of eight or nine teeth, the outer file most developed and composed of large, pointed teeth.



Text fig. 2. *Ixodes cordifer* (female). a, scutum; b, venter of semi-engorged specimen; c, capitulum (dorsal view); d, spiracular plate. The straight lines each represent 0.5 mm.

Venter with genital opening posterior to coxa IV, preceded by an elongate, triangular depression; genital groove conspicuous, very deep for a short distance below genital orifice where it may form deep, circular cavities on each side; anal groove broadly pyriform and meeting at a point behind the anus; body hairs sparse, pale, minute, most conspicuous in unfed specimens near the spiracles.

Spiracular plate broadly ovoid, and broader than long, 0.43 by 0.50 mm.

Legs yellow and of median length; coxae contiguous in unfed specimens but becoming slightly separated as engorgement proceeds; coxa I with two prominent longitudinal ridges; coxae II to IV each with one similar ridge less prominent on coxa IV; a single, conspicuous, medium sized spur at the postero-external angle decreasing in size posteriorly; tarsi as in male.

## MATERIAL EXAMINED AND DESCRIBED.

PAPUA: Sogeri, 10-XI-51, 1 ♂ 4 ♀, J. Barrett; Sogeri, 28-XI-51, 1 ♂ 4 ♀, J. Barrett; Sogeri, 7-XII-51, 1 ♂ 3 ♀, J. Barrett. All specimens were collected from "wallabies".

Little is known of the ticks occurring in New Guinea. Twelve species have been recorded (Nuttall *et al* 1908, 1911, 1915, 1916; Robinson 1926; Krijgsman and Ponto 1932) including two species of *Ixodes*, namely *I. eichhorni* Nuttall and *I. cordifer* Neumann. The latter is distinctive, and among the Australasian species appears closest to *I. holocyclus* Neumann. There is no danger of confusing the two species, however; the males may be readily separated by differences in the anal groove, coxal armature, marginal fold and lateral carinae, and the females by differences in the marginal fold, the auriculae, the longitudinal ridges on the basis capituli and the number and disposal of the teeth on the hypostome.

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